DEPARTMENT OF ENVIRONMENTAL QUALITY
Environmental Assessment

Permitting and Compliance Division
Water Protection Bureau

Name of Project: City of Bozeman, Wastewater Treatment Plant

Location of Project: 255 Moss Bridge Rd.

City/Town: Bozeman **County**: Gallatin

Description of Project: This is a modification to MPDES permit MT0022608 for the domestic wastewater treatment facility used by the City of Bozeman. The City appealed the re-issuance of their MPDES permit in August 2006. The Department chose to modify the permit to resolve the appeal.

Agency Action and Applicable Regulations: The proposed action of the Department is to modify the MPDES permit.

Applicable rules and statute:
ARM Title 17, Chapter 30, Sub-chapter 5 - Mixing Zones in Surface and Ground Water.
ARM Title 17, Chapter 30, Sub-chapter 6 - Surface Water Quality Standards.
ARM Title 17, Chapter 30, Sub-chapter 7 - Nondegradation of Water Quality.
ARM Title 17, Chapter 30, Sub-chapter 12 and 13 - Montana Pollutant Discharge Elimination System Standards.
Montana Water Quality Act, MCA 75-5-101 *et. seq*.

Summary of Issues:
In the appealed permit, the Department imposed nutrients limits to prevent additional loads of total nitrogen and total phosphorous from being discharged to the East Gallatin River. A companion compliance schedule was developed to require the permittee to develop and submit a plan and schedule for reactivation of the infiltration/percolation (I/P) beds to help achieve these limits. A ground water monitoring plan was imposed to evaluate any influences to groundwater from the I/P beds. The permit limits for nutrients were developed using operational data from the WWTP on a seasonal basis and implemented on a seasonal basis.

In the letter of appeal submitted to the Board, the City argued nine points by which they objected to the imposition of nutrient loads in the proposed permit. To eliminate these concerns, the Department is modifying the appealed permit to reflect the new information brought forward. The City argued that, while the I/P beds could possibly be effective in achieving the nutrient load limits during the growing season, they would not achieve the non-growing season load limits due to operational limitations of the I/P beds(i.e. ice buildup and freezing conditions).

The City also questioned the use of operational performance data from the WWTP, as opposed to water quality standards to calculate load limits for nutrients discharged into the East Gallatin

River. The City argues the rational is arbitrary and not based on criteria and standards adopted by the Department.

The City presented information that without an effective treatment process, they would have to physically modify the existing aeration basins at a capital cost of $150,000~$200,000 and yearly operational cost could reach $165,000 to $200,000 per year. The City could not recoup these costs in light of the city's commitment to upgrade the facility to a biological nutrient removal (BNR) process. The City has committed $55 million dollars for the proposed facility upgrade. The City has signed a Notice to Proceed (NTP) on April 16, 2007 with HDR Engineering and Morrison-Maierle, Inc. to initiate site characterization and process design activities.

The Department is proposing the following permit modifications to address the City's appealed conditions:

1. The Department will remove the compliance schedule for the submittal of a plan and schedule for the reactivation of the I/P beds and the accompanying ground water monitoring. Language will be inserted into the permit restricting the use of the I/P beds to emergency conditions only.

2. A new compliance schedule will be inserted requiring the permittee to upgrade its treatment process. The compliance schedule will have the following milestone dates:
    a. The permittee shall approve final waste water plant upgrade designs and have bid documents ready for publication by August 1, 2008,
    b. The permittee will achieve substantial completion of construction activities for the facilities upgrade by March 1, 2011, and
    c. The permittee will successfully start-up and commission the new BNR trains and meet final effluent limits by September 30, 2011. (Personal communications with Tom Adams, April 24, 2007)

    The permittee will be required to submit semi-annual reports (August 28 and January 28), annually, showing progress towards completion of the aforementioned milestones, and the viability of meeting final compliance dates.

3. A final effluent compliance date for nutrient loads (TN and TP) will become effective on September 30, 2011. The nutrient loads developed in the appealed permit will not be modified.

Affected Environment & Impacts of the Proposed Project:

Y = Impacts may occur (explain under Potential Impacts). *Include frequency, duration (long or short term), magnitude, and context for any significant impacts identified. Reference other permit analyses when appropriate (ex: statement of basis). Address significant impacts related to substantive issues and concerns. Identify reasonable feasible mitigation measures (before and after) where significant impacts cannot be avoided and note any irreversible or irretrievable impacts. Include background information on affected environment if necessary to discussion.*

N = Not present or No Impact will likely occur. *Use negative declarations where appropriate (wetlands, T&E, Cultural Resources).*

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	[N] The wastewater treatment facility has been located at this site for decades. The facilities has been built adjacent to the East Gallatin River. The underlying geology is Quaternary alluvium. The USDA has identified the underlying soils as Turner loam, Enbar Clay loam, Blackdog silt loam and Hyalite-Beaverton Complex loam. The area is in the intermountain seismic belt of MT. Based on information from the USGS, the facility is expected to experience a 20% peak acceleration (%g),with 10% probability of exceedance in fifty years. All new construction is required to meet or exceed the current accepted engineering design criteria for wastewater treatment facilities.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	[N] The wastewater treatment facility has been located at this site for decades. Additional parameter limits have been added to protect the receiving water quality (specifically for pathogens and nutrients). Numerous ground water wells surround the facility and are used for public water supply, domestic & stock water. Well logs show that wells completed near the facility are shallow (less than 150') and are completed in alluvium. Well logs show screened intervals to be the lower 10' +/- of the well, or the wells are open at the bottom.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	[N[The existing facility may release odor occasionally during upset conditions. Utilizing aeration the facility should not become anoxic causing odors being produced. No other air quality impacts are expected. Should the facility decide to conduct permitted activities in the future, the Department will evaluate air quality criteria at that time.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	[N] The wastewater treatment facility has been located at this site for decades. With the proposed upgrade to the facility, and if the areas disturbed exceed one acre in size, the facility will be required to submit a notice of intent for coverage under the general permit for storm water discharges associated with construction activities.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	[N] The wastewater treatment facility has been located at this site for decades. New construction will be limited to the original footprint of the facility. The facility will not expand beyond its current boundaries.
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	[N] The wastewater treatment facility has been located at this site for decades. Montana Natural Heritage Program, database searches indicate three species of concern within one mile of the facility. Vascular species are ranked as "critically impaired" locally but "demonstrably secure" on a global scale. Last known sitings have been ninety-eight years ago. One aquatic invertebrate is listed as "imperiled because of rarity" on the local level and "apparently secure" globally.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	[N] The wastewater treatment facility has been located at this site for decades. The facility is contiguous to the East Gallatin River and its flood plain. No additional impacts to the environment will occur because the facility has long been established at the site. New construction will have to adhere to current regulations and standards
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[N] The wastewater facility has been in the current location for decades. Urban development has been encroaching on the facility since that time.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project? Will new or upgraded powerline or other energy source be needed)	No impacts to environment resources are expected at this time.
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	No impacts are expected.

IMPACTS ON THE HUMAN ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N] Public health and safety will be improved by additional treatment of the community's domestic sewage prior to discharge.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[N] No impacts are expected at this time.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[N] No impacts are expected at this time.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[N] No impacts are expected at this time.
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N] No impacts are expected at this time.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N] No impacts are expected at this time.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N] No impacts are expected at this time.

IMPACTS ON THE HUMAN ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N] No impacts are expected at this time.
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N] No impacts are expected at this time.
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N] No impacts are expected at this time.
21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N] No impacts are expected at this time.
22(a). PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	[N] No impacts are expected at this time.
22(b). PRIVATE PROPERTY IMPACTS: Is the agency proposing to deny the application or condition the approval in a way that restricts the use of the regulated person's private property? If not, no further analysis is required.	[ ]
22(c). PRIVATE PROPERTY IMPACTS: If the answer to 21(b) is affirmative, does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives. The agency must disclose the potential costs of identified restrictions.	[ ]

23. Description of and Impacts of other Alternatives Considered: None

24. Summary of Magnitude and Significance of Potential Impacts: None

25. Cumulative Effects: None

26. Preferred Action Alternative and Rationale: The preferred action is to reissue the modified MPDES permit. This action is preferred because the permit program provides the regulatory mechanism for protecting water quality by enforcing the terms of the MPDES permit.

Recommendation for Further Environmental Analysis:

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

Rationale for Recommendation:

27. Public Involvement: The Department intends to issue a public notice and solicit public comment on this action. All substantive comments will be incorporated into the final permit development.

28. Persons and agencies consulted in the preparation of this analysis: None

EA Checklist Prepared By: James Lloyd **Date:** October 22, 2007

Approved By:

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Bonnie Lovelace, Chief Date
Water Protection Bureau